

A STUDY OF FIBRONECTIN IN MALNOURISHED CHILDREN

Thesis Submitted for Partial Fullfilment
of M.S. Degree in Pediatrics

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قالوا

سُبْحَانَكَ لَا إِلَهَ إِلَّا أَنْتَ أَعْلَمُ الْغُيُوبِ
أَنْتَ أَنْتَ الْعَالِمُ الْحَكِيمُ
صَدَقَ اللَّهُ الْعَظِيمُ

سورة البقرة (الآية ٢٢٢)



TO MY MOTHER

and

MY HUSBAND

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LIST OF ABBREVIATIONS

S. aureus	:	Staphylococcus aureus.
LETS	:	Large external transformation sensitive protein.
SF-antigen	:	Soluble fibroblast antigen
CSP	:	Cell surface protein.
CAF	:	Cell adhesion factor
CIg	:	Cold insoluble globulin
PCA	:	Pyrrolidone carboxylic acid
HEP	:	Heparin
SH	:	Sulphydryl groups
CHO	:	Carbohydrate groups
XL	:	Cross linking
S-S	:	Disulfide bridging
FGF	:	Fibroblasts growth factor
RES	:	Reticulo-endothelial system
RDS	:	Respiratory distress syndrome
BMRTC	:	Bone metastasising renal tumour of childhood.
PEM	:	Protein energy malnutrition
TPN	:	Total parenteral nutrition
PCM	:	Protein calorie malnutrition
m	:	Months
F	:	Female
M	:	Male
IgG	:	Immunoglobulin G
L.C. partigen	:	Low concentration partigen

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INTRODUCTION

INTRODUCTION

Plasma proteins can serve as indicators of nutritional status e.g. Albumin and transferrin, more recently retinol binding protein and thyroxin binding pre-albumin have been considered as markers for subclinical protein calorie malnutrition.

A characteristic of these proteins is that their half lives [time during which radioactivity or other property of subst. falls to half its original value] are less than 2 days. Fibronectin falls within this group with its recent characterization and half life estimation of 15-20 h.

Studies have shown that even with minimal starvation, plasma fibronectin levels drop rapidly and then with refeeding particularly on a CHO rich diet the levels are rapidly restored. [Yoder et al., (1983)].

AIM OF WORK

AIM OF THE WORK

The aim of this work was to assess the value of measuring the fibronectin levels in plasma of malnourished infants and to compare it with normal infants of the same age group and see the effect of refeeding to evaluate it as a new nutritional parameter and compare it with serum albumin.

***REVIEW
OF
LITERATURE***

REVIEW OF LITERATURE

FIBRONECTIN

HISTORICAL PERSPECTIVE:

The term fibronectin describes a family of structurally and immunologically related high molecular weight glycoproteins that are present throughout the body [Mosesson & Amrani, 1980].

Prior to the suggestion of the name fibronectin [Kuusela et al., 1976] the protein in its various forms had been designated by a variety of terms, including: Large external transformation sensitive protein (LETS) [Hynes & Bye, 1974], soluble fibroblast antigen (SF-antigen) [Ruoslahti & Vaheri, 1974], cell surface protein (CSP) [Yamada & Weston, 1974], cell adhesion factor (CAF) [Pearlstein, 1976], galactoprotein a [Gahmberg et al., 1974] and Z [Blumberg & Robbins, 1975] cold insoluble globulin (CIg) [Chen & Mosesson, 1976] [Morrison et al., 1948], opsonic protein, [Saba, 1970] cell spreading factor [Grinnell, 1976] and anti-geiatin factor [Wolff et al., 1967].

At present, there appears to be widespread recognition of the need for a single general designation for all forms of the protein as well as general acceptance of the term Fibronectin [Mosesson & Amrani, 1980].

Two forms of fibronectin have been characterized: a soluble form in blood and other body fluids and another insoluble form is present on the surface of cells, in extracellular spaces of connective tissue and as a component of basement membrane [Mosesson & Amrani, 1980] and [Ruoslahti et al., 1981].